

A Smarter American Grid: What is Stopping Us?



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Terms like “smart grid” and “modern grid” are unavoidable in conversations about the future of the American electrical grid; but what do these umbrella words mean for the future of utility companies and energy consumers? Jonas Monast, Assistant Professor at UNC School of Law and former Director of the Climate & Energy Program at the Duke University Institute for Environmental Policy explains that a modern grid takes a multi-faceted approach. This includes an emphasis on infrastructure that is resilient to cyberattacks and weather, utilities that integrate renewable resources, and appliances that are more efficient. To consumers this would mean optimizing electrical usage during peak production and having smart appliances, for example lights that turn off automatically. For utility providers, a modern grid would also efficiently use intermittent renewable resources to supplement pre-existing continuous production. A modern grid would also require communication between companies and consumers concerning utility rates, efficiency programs, and renewable options.

Challenges to a Modern Grid

Professor Monast explained that the road to a smarter grid might be complicated by existing structures in the utility system, namely vertical integration. In the industry, vertical integration is when a company controls all of the means of production and distribution of electricity. Vertical integration disincentivizes utilities from adopting

new methods because in the current system, the more energy they sell, the more revenue they earn. The transition to a smarter grid would more efficiently use energy, therefore leading utility companies to sell less of their product. Decoupling revenue from the amount of energy consumed may prove to be pivotal in changing the American grid, as the external benefits must outweigh the potential loss in sales for utility companies.

With his extensive legal background, Monast suggested political action may be a useful tool in initiating change. Policies and incentives may be the best way to promote progress for our grid by making smart technology advantageous for energy providers. Subsidizing consumer features that help increase energy efficiency would encourage customers to choose energy saving, smarter options; for example, heating and cooling systems that turn off automatically when people aren't home.

Historically, utility companies would be less likely to market these and other energy efficiency programs to their customers, as they would in turn demand less energy per household. By shifting the financial burden from the utility companies and instead to the government, companies would be able to push new technologies and shift their energy compositions without fear of losing money. Monast notes that this would look different across the country due to the lack of consistent policies nationally across electric companies, and the variance in dominant utility providers regionally.

Signs of Resilient and Flexible Model

As technology progresses, it is important that the cost of implementing energy saving devices does not dissuade its adoption. In order to work towards this end, utility providers would have to rethink their business models to rely less on the profitization of household utilities. Monast cites recent initiatives being taken by Duke Energy as evidence of this possible change. The utility provider announced that starting in March 2020, they will not disconnect service for nonpayment due to the financial strain of the coronavirus. This is a part of a national trend where many fees will be

waived for households that are in states experiencing a state of national emergency designation. Since the pandemic, Customer-Utility communication at Duke Energy has been heavily increased, with the provider establishing resources such as the Energy Neighborhood Fund and websites dedicated to COVID-19 updates for their consumers. Though unexpected, this response exhibits the resiliency and flexibility utility providers like Duke Energy are able to tolerate, which would be necessary to transition to a modern grid in the future.

Though the road to a modern grid will be difficult, recent developments have demonstrated that change is possible. For long standing infrastructure changes to the American electrical grid to take hold, Monast says government intervention, paired with the tolerance of utility companies will be imperative to the widespread adoption of energy-saving solutions.

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